

WHAT IS CLAIMED IS:

1. A method for managing information including word codes, comprising an access-authorization process for authorizing, according to a reference-file, at least one of multiple function-units to be an authorized function-unit having access to an object document which is in a known category and provided by a known document-issuer, said document including plural word codes, said access-authorization process comprising at least one of the following three sub-processes:

searching said reference-file for a first authorization-record including frequency-numbers each representing the frequency that a different one of said function-units has been authorized to have access to the documents provided by said known document-issuer, and selecting, according to said first authorization-record, at least one said function-unit to be said authorized function-unit;

searching said reference-file for a second authorization-record including the frequency-numbers each representing the frequency that a different one of said function-units has been authorized to have access to the documents in said known category, and selecting, according to said second authorization-record, at least one said function-unit to be said authorized function-unit; and

identifying at least a crucial key word code from said object document, searching said reference-file for a third authorization-record including the frequency-numbers each representing the frequency that a different one of said function-units has been authorized to have access to the documents including said crucial key word code, and selecting, according to said third authorization-record, at least one said function-unit to be said authorized function-unit.

2. The method according to claim 1 wherein said crucial key word code is a word code selected by said known document-issuer from the abstract of

said document.

3. The method according to claim 1 wherein selecting, according to said first authorization-record, at least one said function-unit to have access to said object document, comprises:

5        comparing the frequency-numbers in said first authorization-record to a criteria-frequency-number, to identify each said function-unit which has been authorized, for at least a frequency represented by said criteria-frequency-number, to have access to the documents provided by said known document-issuer, whereby the identified function-unit is selected  
10        to have access to said object document.

4. The method according to claim 1 wherein selecting, according to said second authorization-record, at least one said function-unit to have access to said object document, comprises:

      comparing the frequency-numbers in said second authorization-record  
15        to a criteria-frequency-number, to identify each said function-unit which has been authorized for at least a frequency represented by said criteria-frequency-number to have access to the documents in said known category, whereby the identified function-unit is selected to have access to said object document.

20        5. The method according to claim 1 wherein selecting, according to said third authorization-record, at least one said function-unit to have access to said object document comprises:

      comparing the frequency-numbers in said third authorization-record to a criteria-frequency-number, to identify each said function-unit which  
25        has been authorized for at least a frequency represented by said criteria-frequency-number to have access to the documents including said crucial key word code, whereby the identified function-unit is selected to have access to said object document.

6. The method according to claim 1 wherein said access-authorization

process further comprises:

forming a list to contain each said authorized function-unit;

requesting a response of said authorized function-unit to said object document; and

5 modifying said list according to said response.

7. The method according to claim 1 wherein said access-authorization process further comprises at least two of the following three steps (a), (b), and (c), in addition to step (d):

(a) performing a first mathematical operation between a provider  
10 weight value and said frequency-numbers included in said first authorization-record to obtain a group of provider-based authorization-reference values respectively corresponding to different ones of said function-units;

(b) performing a first mathematical operation between a category  
15 weight value and said frequency-numbers included in said second authorization-record to obtain a group of category-based authorization-reference values respectively corresponding to different ones of said function-units;

(c) performing a first mathematical operation between a crucial-key-  
20 word weight value and said frequency-numbers included in said third authorization-record to obtain a group of crucial-key-word-based authorization-reference values respectively corresponding to different ones of said function-units;

(d) selecting, according to at least two of the three groups of said  
25 authorization-reference values, at least one said function-unit to have access to said object document.

8. The method according to claim 7 wherein said first mathematical operation is multiplication.

9. The method according to claim 7 wherein step (d) comprises:

performing a second mathematical operation between said authorization-reference values which are respectively in different ones of said at least two of the three groups and correspond to the same one of said function-units, to obtain a group of compound-reference values  
5 respectively corresponding to different ones of said function-units; and

comparing said compound-reference values with a compound-reference-criteria value to identify each said function-unit corresponded by one said compound-reference value larger than said compound-reference-criteria value, whereby the identified function-unit is selected to  
10 have access to said object document.

10. The method according to claim 9 wherein said second mathematical operation is addition.

11. The method according to claim 7 wherein step (d) comprises:

performing a second mathematical operation between said  
15 authorization-reference values which are respectively in different ones of said at least two of the three groups and correspond to the same one of said function-units, to obtain a group of compound-reference values respectively corresponding to different ones of said function-units; and

identifying each said function-unit corresponded by one said  
20 compound-reference value which, in order of magnitude among all said compound-reference value, is within a compound-reference-criteria range, whereby the identified function-unit is selected to have access to said object document.

12. The method according to claim 9 wherein the sum of said weight  
25 values in said at least two of three steps (a), (b), and (c) is one.

13. The method according to claim 1 further comprising a category-classification process including:

identifying at least a key word code of said object document; and  
designating said known category according to the identified key word

code.

14. The method according to claim 13 wherein identifying at least a key word code of said object document, comprises:

5       counting the frequency each word code of said object document appears in said object document, to obtain an appearing frequency of each word code of said object document;

      designating an arbitrary word code of said object document as a candidate key word code if the appearing frequency of said arbitrary word code meets a reference condition; and

10       searching a key-word-reference database for a reference code corresponding to said candidate key word code, and determining, in case said reference code is searched out, whether or not said candidate key word code is the key word code according to an attribute of said reference code.

15   15. The method according to claim 14 wherein said reference condition is such that said arbitrary word code is designated as a candidate key word code if the appearing frequency of said arbitrary word code is larger than a key-word-criteria value.

20   16. The method according to claim 15 wherein said key-word-criteria value is the average of the appearing frequencies of all the word codes of said object document.

      17. The method according to claim 14 wherein said reference condition is such that the arbitrary word code is designated as a candidate key word code if the appearing frequency of the arbitrary word code in order of magnitude among said appearing frequencies of all the word codes of said object document is within a frequency-order-criteria-range.

25   18. The method according to claim 14 wherein the reference code corresponding to said candidate key word code includes said candidate key word code and an attribute, and said candidate key word code is

determined to be a key word code if the attribute of said reference code is represented by a first symbol.

19. The method according to claim 14 wherein the reference code corresponding to said candidate key word code includes said candidate  
5 key word code and an attribute, and said candidate key word code is determined to be a key word code unless the attribute of said reference code is represented by a second symbol.

20. The method according to claim 14 wherein said key-word-reference database includes a key-word-code list and a non-key-word-code list, said  
10 candidate key word code is determined to be a key word code if said candidate key word code is on said key-word-code list, and determined to be not a key word code if said candidate key word code is on said non-key-word-code list.

21. The method according to claim 13 wherein designating said known  
15 category comprises:

searching a key-word-code-to-category-mapping table for a category-code corresponding to the identified key word code, whereby said known category is designated said category-code.

22. The method according to claim 21 wherein designating said known  
20 category according to the identified key word code, further comprises:

notifying said known document-issuer (or document-provider) if more than one category-code is searched out of said key-word-code-to-category-mapping table to correspond to the identified key word code.

23. The method according to claim 1 wherein the frequency one of said  
25 function-units has been authorized to have access to the documents provided by said known document-issuer, is the times the one of said function-units has been authorized to have access to the documents provided by said known document-issuer.

24. The method according to claim 1 wherein the frequency one of said

function-units has been authorized to have access to the documents provided by said known document-issuer, is a first times-number divided by a second times-number, with said first times-number being the times the one of said function-units has been authorized to have access to the documents provided by said known document-issuer, and said second times-number being the sum of the times that all said function-units have been authorized to have access to the documents provided by said known document-issuer.

25. A method for managing information including word codes, comprising an access-authorization process for authorizing, according to a reference-file, at least one of multiple function-units to be an authorized function-unit having access to an object document including plural word codes, said access-authorization process comprising at least one of the following three sub-processes:

identifying a document-issuer-code from said object document, searching said reference-file for a first authorization-record including the frequency-numbers each representing the frequency that a different one of said function-units has been authorized to have access to the documents including said document-issuer-code, and selecting, according to said first authorization-record, at least one said function-unit to be said authorized function-unit;

identifying a category-code from said object document, searching said reference-file for a second authorization-record including the frequency-numbers each representing the frequency that a different one of said function-units has been authorized to have access to the documents including said category-code, and selecting, according to said second authorization-record, at least one said function-unit to be said authorized function-unit; and

identifying at least a crucial key word code from said object document,

searching said reference-file for a third authorization-record including the frequency-numbers each representing the frequency that a different one of said function-units has been authorized to have access to the documents including said crucial key word code, and selecting, according to said  
5 third authorization-record, at least one said function-unit to be said authorized function-unit.

26. An apparatus applied to an information management system in which at least one of multiple function-units is selected to be an authorized function-unit having access to an object document that includes word  
10 codes, is in a known category, and is provided by a known document-issuer, said apparatus comprising a data-storage portion having a database residing thereon, said database comprising at least one of the following two authorization-records:

a first authorization-record including the frequency-numbers each  
15 representing the frequency that a different one of said function-units has been selected to have access to the documents provided by said known document-issuer; and

a second authorization-record including the frequency-numbers each representing the frequency that a different one of said function-units has  
20 been selected to have access to the documents in said known category.

27. The apparatus according to claim 26 further comprising an operational portion for selecting, according to at least one of said two authorization-records, at least one of said function-units to be said authorized function-unit having access to the object document.

25 28. The apparatus according to claim 26 wherein said database further comprises a third authorization-record including the frequency-numbers each representing the frequency that a different one of said function-units has been selected to have access to the documents including at least a crucial key word code of said object document.



29. The apparatus according to claim 28 further comprises an operational portion for selecting, according to at least two of said first, second, and third authorization-records, at least one of said function-units to be said authorized function-unit having access to the object document.

5 30. The apparatus according to claim 26 wherein said data-storage portion is a memory readable by said operational portion.

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